2019 CLOSED CALL FOR RESEARCH PROPOSALS

The Mindset Scholars Network (MSN) invites proposals funded through the support of grants from the Bill & Melinda Gates Foundation. We invite proposals for innovative, interdisciplinary research projects focused on K-12 classrooms and teachers that will advance scientific and practical understanding of teacher beliefs and practices and/or measurement of learning environments and educator data use. The grant program is open to all members of the Mindset Scholars Network (MSN).[1] The grant program is open to applications for analysis of existing datasets and/or new data collection; projects must be feasible in the 18-month grant period. We ask teams to submit non-binding letters of intent (<1 page) with a brief description of the project, team, and anticipated budget by June 14, 2019. Proposals for invited projects are due July 19, 2019. Final decisions and notifications will be made by August 23, 2019.

Applicants who wish to discuss their project before applying are encouraged to contact Shanette Porter, Director of Research for the Mindset Scholars Network (shanette@mindsetscholarsnetwork.org).

I. BACKGROUND OVERVIEW

The Mindset Scholars Network (MSN) seeks to enhance the quality and pace of scientific knowledge accumulation and translation through our sponsored research projects. Through prior RFPs and our National Study of Learning Mindsets Early Career Fellowship, we have sponsored dozens of research projects on topics relevant for advancing knowledge on learning mindsets, including: how learning environments shape students' mindsets; heterogeneity in mindset intervention effects; and the mediating role of mindsets in academic experiences and achievement. Our research portfolio is substantively interdisciplinary in nature, bridging theoretical and methodological silos in the service of producing rigorous, practically-relevant scientific knowledge in education.

The aim of this RFP is to facilitate two strands of rigorous, interdisciplinary research that yield new knowledge about K-12 learning environments that foster inclusion (e.g., cultural continuity, identity safety, community) and adaptive student mindsets (growth mindset, belonging, and purpose and relevance). The first topic focuses on exploring teacher practices, behaviors, and beliefs that facilitate a sense of belonging and positive academic identity development for students with stigmatized identities, with a particular focus on mathematics during middle childhood through middle adolescence. The academic experience for some students is exclusionary. For example, they may not be invited to participate in meaningful learning, or educators may hold low expectations for their success, both of which may contribute negatively to academic performance and later educational attainment. This RFP seeks to support projects that explore whether teachers who hold more adaptive beliefs and engage in more supportive practices disrupt these patterns, particularly in the mathematics context. The second topic focuses on both measurement of classroom environments and understanding how educators (teachers and administrators) can use these data to alter learning environments in ways that foster inclusion, motivation, and adaptive student mindsets. Currently, measures of context are not tied to a robust understanding of how to use data to alter learning environments in ways that foster adaptive psychological experiences – a promising mechanism for informing change efforts in education.

Each project will be expected to produce *and post* an academic working paper and an interpretive summary that translates key insights and lessons learned for a non-technical audience. All projects (including empirical studies that rely on new data collection) are welcome to apply under this RFP; applicants are encouraged to leverage existing data, particularly the Measures of Effective Teaching Collection (MET and METX) for Topic 1 and PERTS Engagement Project data for Topic 2. MET and PERTS data may only be used for secondary analysis; new data collection or analysis of other datasets may be proposed in concert with, or independently of, MET or PERTS secondary analysis. Projects using quantitative, qualitative, or mixed methods are all eligible for funding under this RFP. We invite diverse methodological approaches, including exploratory, correlational, or descriptive studies that extend or expand our current understanding of relevant phenomena; studies that are experimental and/or elucidate causal mechanisms; replication, design-based, efficacy, effectiveness, or confirmatory studies; ethnographic or phenomenological research studies; and studies that develop or validate measures.

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[1] A member of the Mindset Scholars Network must serve as principal investigator of the proposed research project; the MSN welcomes non-network scholars as members of project teams, including as co-principal investigator(s).

There are no postsecondary priority topics for this RFP. Research on postsecondary populations will be considered only for projects that give context for how the project will be informative for earlier developmental stages.

Project teams must include an MSN member as the principal investigator (PI); scientists with relevant expertise who are not members of the MSN may be included as members of the research team including as Co-PIs; project teams must be interdisciplinary. Project PIs must present their teams' projects at the MSN Fall 2019 Convening on October 16-17, 2019 in Seattle, WA; PIs must be involved with presenting their teams' projects at the MSN Convenings in Spring and Fall 2020. In order to foster a collaborative community within MSN that can productively contribute to advancing knowledge on mindsets, the project teams must include at least one member of the 2018 cohort of MSN scholars. To continue developing a talented pipeline of scientists committed to novel interdisciplinary, practically-relevant research, all project teams must also include at least one emerging scholar (i.e., a graduate student, or postdoctoral researcher/assistant professor who earned a PhD in 2016 or later) who contributes substantively to the project. Proposals that outline a plan for mentorship of the emerging scholar(s) will be prioritized for funding.

RESEARCH TOPICS AND DATASETS
All projects that advance scientific and practical understanding of teacher beliefs and practices and/or measurement of learning environments and educator data use, as described below are welcome to apply under this RFP.

Topic 1: Teacher Beliefs and Practices
The first topic focuses on identifying and codifying teacher practices and behaviors that facilitate a sense of belonging and positive academic identity development, particularly in mathematics contexts, among students with stigmatized identities, including, for example, black, Latinx, and Native American students; students from families facing economic disadvantage; students who are English language learners; and girls. Specific interests include:

- Identifying teacher behaviors and beliefs that foster a sense of belonging, support positive academic identity development, and predict academic achievement, particularly in the middle grades;
- Examining how teacher behaviors are experienced by students, especially how teachers or classrooms are experienced differently by different students; and,
- Investigating the extent to which teacher beliefs and practices are related to students' social, psychological, and academic outcomes using innovative computing approaches, such as computer vision or speech processing

All relevant projects (including studies that require new data collection) are welcome to apply under this RFP; we encourage proposals that leverage secondary analysis of the MET Collection, which includes classroom footage of teachers and classrooms in the 2011-13 academic years, as well as student survey, academic, and homework assignment data, and teachers' lesson plans, worksheets, and handouts. For more information, see: https://tle.soe.umich.edu/MetxInfo; https://www.icpsr.umich.edu/icpsrweb/content/METLDB/step1/whatismet.html. The analysis of newly collected data or secondary analysis of other existing data may be proposed in concert with MET analysis or as a separate, independent project.

Topic 2: Measurement of Learning Environments and Educator Data Use
The second topic focuses on advancing knowledge on measurement of classroom environments, and understanding how educators can use these data to alter environments in support of students' motivation, inclusion, and adaptive learning mindsets. Priority will be given to those projects that aim to provide a better understanding of educators' gathering, interpretation, and application of data about their context. Particular topics of interest include:

- Developing and validating equity-centered measures of the environment, especially in the service of shaping mindsets and motivation;
- Developing measures of the structures, contexts, and conditions that signal inclusion and give rise to psychologically adaptive beliefs, skills, and behaviors for different students;
- Exploring educators' beliefs and behaviors and how they relate to their data use practices; and,
- Examining how learning environment data and educator data use can contribute to fostering more inclusive, motivating classrooms

All relevant projects (including studies that require new data collection) are welcome to apply under this RFP; we encourage proposals that leverage secondary analysis of the PERTS Engagement Project datasets, which include survey and open

response information about classroom learning environments and educator data use, gathered from approximately 90 teachers and 5400 unique students in 240 classrooms. For more information, see the PERTS website (https://www.perts.net/engage) and data documentation (https://bit.ly/2HEkyez). The analysis of newly collected data or secondary analysis of other existing data may be proposed in concert with PERTS analysis or as a separate, independent project.

FUNDING AND SUPPORT AVAILABLE

In addition to funding selected projects, MSN may provide in-kind support, including but not limited to:

- Assistance identifying potential collaborators with relevant methodological or substantive expertise
- Support for preregistration, public data and syntax archiving, and other open science processes
- Assistance soliciting feedback on preliminary findings from other scientists and/or practitioners
- Assistance packaging and disseminating findings for academic and broader audiences
- Support preparing for practitioner-facing presentations and/or media interviews associated with projects
- Feedback on teams' written works, including the working paper

A template for interpretive summaries of project findings for non-technical audiences (a deliverable for this RFP) will be provided to project teams. Project teams will work with the MSN Communications team to revise and edit these interpretive summaries before they are posted to the MSN website.

II. ELIGIBILITY AND AWARD INFORMATION

We invite research proposals for project funding ranging from $50,000 – $150,000 for the 18-month grant term. We expect that proposed budgets will vary and plan to fund a portfolio of projects of different sizes; the proposed budget should match the scope of the project (and the match between budget and scope will be a factor in selection). Smaller, exploratory projects will be prioritized for funding. In the unlikely circumstance that your project could not be completed without exceeding the budget maximum, please contact shanette@mindsetscholarsnetwork.org by June 6, 2019. We ask that the Principal Investigator (PI) be a member of the Mindset Scholars Network, but welcome non-network scholars to be Co-PIs or otherwise serve as a member of project teams. Project PIs must be available to introduce their teams' projects at the MSN Fall 2019 Convening on October 16-17, 2019 in Seattle, WA; PIs must be involved with presenting their projects' in-progress findings at the MSN Convenings in Spring and Fall 2020. Project teams that include at least one member of the 2018 cohort of MSN scholars and at least one emerging scholar (i.e., a graduate student, or postdoctoral researcher/assistant professor who earned a PhD in 2016 or later) will be prioritized for funding.

Applications will be considered if:
1. The applicants meet eligibility requirements stated above.
2. The research questions proposed fall under the topics described above.
3. The application follows the formatting guidelines and includes all relevant application materials as described below.

III. APPLICATION REVIEW CRITERIA

Priority will be given to proposals that are strongest in meeting the following criteria, which will be evaluated in the review process:

1. **Fit for RFP topic:** The project's questions, approach, design, and dissemination plan are well-developed and appropriate for advancing knowledge relevant to the RFP topic.
2. **Practical- and policy relevance:** The project addresses practice- and policy-relevant research questions and includes a plan to create an interpretive summary that translates the findings from the research for non-technical audiences; the project has the potential to generate insights about how to improve the psychological experience of students in school.
3. **Interdisciplinarity:** The project includes multiple theoretical and empirical approaches and draws on expertise spanning more than one discipline; the project includes a plan for how collaboration will occur across methodological and/or disciplinary lines.
4. **Feasibility:** The project plan includes an efficient turnaround of analyses and reporting of results and proposes work that is feasible given the data and project team; the proposed team has the capacity to launch the project immediately and generate findings within the required timeframe; the budget is aligned with the proposed project.
5. **Approach:** The project's approach is well-developed and appropriate to the aims of the project.
6. **Strength of research team:** The team has a demonstrated ability to carry out and publish high-quality research, is qualified to bridge across disciplines with appropriate content knowledge and methodological expertise, and otherwise has the expertise to carry out all elements of the proposed project, including dissemination of research findings to a pre-print repository and other academic outlets; proposals for Topic 1 with a focus on mathematics environments must include an expert in mathematics instruction, education, and/or pedagogy.
7. **Sustained support for emerging scholars:** The project provides an opportunity for emerging scholars (graduate students, or postdoctoral researchers/assistant professors who earned a PhD in 2016 or later) to stretch and grow professionally in a supportive and collaborative team culture; a plan and goals for continual support and mentorship of the emerging scholar is outlined.
8. **Equity**: The methods and narrative reflect a sophisticated understanding of equity and apply that knowledge in the design of the study.
9. **Openness and Transparency**: The project identifies a public repository site for each of the following: where analyses will be preregistered, where data and syntax will be uploaded, and where a pre-print working paper will be posted; the project includes plans for sharing early versions of findings with other researchers for feedback and otherwise models research transparency best practices.

IV. APPLICATION PREPARATION AND SUBMISSION

NON-BINDING LETTER OF INTENT

We ask all interested teams to email a non-binding letter of intent (<1 page) with a brief description of the project, team, and anticipated budget (include estimates for personnel, travel, and data collection if applicable in table format) to research@mindsetscholarsnetwork.org by June 14, 2019.

PROPOSAL

A. FORMATTING

For ease of reviewing, please format application materials to fit on 8.5 x 11" paper with 1-inch margins, single line spacing, 12-point font, and consistent with the professional style guidelines of the applicant's field. We have provided suggested page limits for each section (listed in parentheses below). All proposal materials must be submitted as a single PDF document. Page maximums are included below.

B. PROPOSAL MATERIALS

Proposals should include the following:

1. ***Project Abstract:*** A 1-paragraph description of the project.

2. ***Project Description*** *(up to 5 pages):* We recommend that the description contains the following sections:

   - *Specific Aims:* Describe the background, motivation or objectives of the project, and the research hypotheses or questions addressed.
   - *Significance:* Describe how the project fits the RFP topic, and address relevance for practice/policy, equity, and interdisciplinarity criteria listed above.
   - *Approach:* Describe the proposed research plan, including analytic methods, innovation on methods (when applicable), and justification for the proposed approach. Describe how equity is centered in the work. We will consider projects that use qualitative, quantitative, or mixed-method approaches; innovative approaches like neuroimaging and machine learning are encouraged; projects should advance knowledge on methods and theory related to mindset science.
   - *Project Timeline*: Include a brief project timeline (table format preferred) that identifies major activities, the names of individuals who will perform the various activities, and their projected completion dates. The timeline should include the following deliverables:
     - Pre-registration completed and submitted to MSN and posted to a public repository (list site) by October 1, 2019
     - A list of hypotheses or research questions and planned design and methodological approach submitted in September 2019 to MSN in advance of PI sharing at the MSN Fall 2019 Convening on October 16-17, 2019 in Seattle, WA
     - Preliminary findings presentation submitted in April 2020 to MSN in advance of PI or Co-PI sharing at the MSN Spring 2020 Convening
     - First draft of both working paper and interpretive summary submitted to MSN by August 1, 2020
     - Presentation of project findings and progress submitted to MSN in advance of PI or Co-PI sharing at MSN Fall 2020 Convening (date TBD; approx. October – November 2020)
     - Final draft of working paper submitted to MSN and posted to public pre-print repository (list site) and final draft of interpretive summary submitted to MSN and posted to MSN's website by February 29, 2021
     - Notification of whether the project plans to seek funding from federal or private sources for related follow up analyses or new data collection efforts submitted to MSN by February 29, 2021
     - Public archiving (list site) of project data and syntax by February 29, 2021
     - By request meeting with the Bill and Melinda Gates Foundation in February – March 2021

- o Final reports on expenditures submitted to NVF by March 15, 2021
- *Authorship plans:* Include a paragraph description of a tentative plan regarding how authorship will be shared. These plans should be collaborative and inclusive of the full team, including emerging scholars.
- *Research team:* Include a paragraph description of the feasibility of the project given the strength of the research team and their ability to carry out rigorous research, and briefly describe how the PI and/or other members of the research team will mentor or support an emerging scholar.
- *Open science plans:* List a repository where you will post your preregistration; list a pre-print repository where you plan to submit your working paper; list a data repository where you will submit your project datafiles and syntax. Include a paragraph description of your open science plans including any special considerations for making your preregistration, working paper, data, or syntax public, and how you will address these considerations in the service of open and transparent science.

3. **CVs for the PI, Co-PI(s), and other Key Personnel:** Given the funding timeline and relatively quick turnaround for sharing results, it will be critical that everyone on the team is on staff and able to hit the ground running as soon as the project has been selected for funding. We expect that team members may hold very different roles based on their interests, expertise, and availability. Please list the names of all project members and the proportion of their time that will be dedicated to the project, and attach copies of their CVs to the proposal. This list should include the names of any undergraduate or graduate students who will be involved.

4. **Budget and Budget Justification** *(1-2 pages):* Teams that are invited to submit full proposals should use the budget template provided. Include PI (and Co-PI if applicable) effort, other personnel, new data collection (if applicable), and travel expenses (if necessary for data collection and/or the team feels it is necessary to meet in-person outside the context of MSN Convenings, which are funded separately by MSN). Teams will be given the option of holding a half-day working session in advance of, or after, the Spring 2020 and Fall 2020 MSN Convenings with all key project personnel; please indicate the likelihood that the project team will utilize these sessions and at which convenings. Funds can be used to cover team personnel's salaries (and tuition in the case of students). Funds may be used for team members to present on the project at conferences if the conferences take place within the 18-month period of the grant. Honoraria and consulting fees may be considered under special circumstances; please include a justification for why such expenditures are required. Indirect costs should be calculated at up to 15% of total direct costs. Include a list of any other existing or anticipated funding for research related to the proposed project.

5. **References:** Please include a list of references cited in the project description.

C. APPLICATION DEADLINE AND TIMELINE FOR REVIEW

A non-binding letter of intent (<1 page) with a brief description of the project, team, and anticipated budget should be emailed to research@mindsetscholarsnetwork.org by June 14, 2019; we will review all letters of intent and projects that are considered viable for funding will be asked to submit a proposal by June 24, 2019. Proposals should be emailed by the Principal Investigator to research@mindsetscholarsnetwork.org by July 19, 2019. Awarded projects will be notified in late August. Funds will be awarded in the form of sub-awards by MSN's independent fiscal sponsor, New Venture Fund, a 501(c)3 organization.

Note: While not required for submission of the proposal, please be advised that New Venture Fund will require the following documentation from all awarded PIs' institutions: (a) an IRS Letter of Determination for US-based organizations; (b) most recent 990; (c) most recent audited financial statements; (d) list of board of directors; (e) organizational budget and project budget (the project budget will be submitted as part of the proposal using New Venture Fund's template, and will include both the MSN amount as well as the total amount if the project is receiving funds from more than just MSN).